

## **ABSTRACT**

A polynomial predistorter and predistorting method for predistorting a complex modulated baseband signal are provided. In the polynomial predistorter,  
5 a first complex multiplier generates first complex predistortion gains using a current input signal and complex polynomial coefficients modeled on the inverse non-linear distortion characteristic of the power amplifier, and multiplies them by I and Q signal components of the current input signal, respectively. At least one second complex multiplier generates second complex predistortion gains using  
10 the complex polynomial coefficients and previous predistorted signals and multiplies them by I and Q signal components of the previous predistorted signals, respectively. A summer sums the outputs of the first and second complex multipliers and outputs the sum as a predistorted signal to the power amplifier.